UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/667,689	09/22/2000	Theodore Rappaport		9715

30743 7590 03/14/2005

WHITHAM, CURTIS & CHRISTOFFERSON, P.C.
11491 SUNSET HILLS ROAD
SUITE 340
RESTON, VA 20190

EXAMINER	
ZHOU, TING	
ART UNIT	**PAPER NUMBER**
2173	

DATE MAILED: 03/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/667,689	RAPPAPORT ET AL.	
	Examiner	Art Unit	
	Ting Zhou	2173	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-69* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-69* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 December 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a)..

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed on 27 December 2004 have been received and entered. Claims 1-69 as amended are pending in the application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-69 are rejected under 35 U.S.C. 102(b) as being anticipated by "SMT Plus 1.0 User's Manual", authored by Skidmore et al.

Referring to claims 1, 12, 19 and 31, Skidmore et al. teach a site specific method and apparatus comprising generating a computerized model of a space, the space having a plurality of different objects therein each of which may have attributes which impact performance of a communications network (displaying the floor plan of a building having a plurality of base stations and interference sources, which change the performance and coverage of the communications network) (page 2, first and second paragraph and further shown in Figure 4.2), establishing a desired performance metric for at least one selected location within the space (users can specify parameters for the base stations to match any desired indoor radio system, set boundaries for the contour calculations and establish desired results for the simulation runs) (page 2, second paragraph, page14, second paragraph, page 25-26, sections 5.2 –5.3 and page

43), modeling performance attributes of a plurality of different components which may be used in the communications network (modeling base stations and interference points, each with a set of operating parameters, on the floor plan) (page 9, page 23, second paragraph and further shown in Figure 4.3), specifying components from the plurality of different components to be used in the communications network (adding base stations and interference sources on the floor plan) (page 9 and page 21, section 4.4), specifying locations within the space for a plurality of different components in the computerized model (positioning the base stations and interferences sources on the floor plan) (page 2, second paragraph, page 9 and page 21, section 4.4), predicting a predicted performance metric for the at least one selected location within the space based on the selected components and the selected locations (simulating the plan to predict coverage contours of the base station) (page 23 and Figure 4.3), and comparing the predicted performance metric to the desired performance metric (the simulation results show and display predicted contour coverage for respective base stations and interference sources, allowing users to compare the displayed simulation results to the user desired results) (page 9, last paragraph, pages 23-24 and pages 29-32).

Referring to claims 2 and 20, Skidmore et al. teach specifying components and locations automatically multiple times until a desired comparison is obtained in the comparing step (upon receiving user instructions to load a number of different floor plan drawings into SMT Plus, the SMT Plus system automatically changes the components and locations of components to correspond to the loaded floor plan drawing numerous times until users are satisfied with the simulation results; furthermore, upon receiving user instructions to add, delete and reposition base sources and interference sources, SMT Plus automatically adjusts the floor plan to

correspond to user specifications, until the users are satisfied with the predicted simulation results) (pages 9 and 20-22).

Referring to claims 3,13, 21 and 32, Skidmore et al. teach specifying a configuration for the selected components (selecting components such as base stations and interference sources to be placed and positioning the selected components at particular locations on the floor plan) (pages 9 and 26-29, section 5.3).

Referring to claims 4, 14, 22 and 33, Skidmore et al. teach specifying a configuration includes the step of defining an orientation of the selected component in the space at the selected location (once the user selects the location to place the base station and interference sources, these components are oriented on the chosen orientation according to user specification, i.e. the height of the station above the floor, or the environment and view point, i.e. floor height and zoomed in, zoomed out view of the floor plan) (page 10, pages 21-23,sections 4.3-4.4 and 26, section 5.3). This is further shown in Figures 5.4 and 5.5.

Referring to claims 5, 23 and 39, Skidmore et al. teach a specifier specifying a configuration for the selected components (allowing users to specify configurations and parameters via dialog boxes) (pages 9, 23-29 and 43), wherein one or more of the steps of specifying components, specifying locations, and specifying a configuration are performed automatically multiple times until a desired comparison is obtained in the comparing step (upon receiving user instructions to load a number of different floor plan drawings into SMT Plus, the SMT Plus system automatically changes the components, locations of components and the parameter values of the components to correspond to the loaded floor plan drawing numerous times until users are satisfied with the simulation results; furthermore, upon receiving user

instructions to add, delete and reposition base sources and interference sources, SMT Plus automatically adjusts the floor plan to correspond to user specifications, until the users are satisfied with the predicted simulation results) (pages 9 and 20-22).

Referring to claims 6, 15, 24 and 34, Skidmore et al. teach at least some of the components specified are wireless communication components (such as base stations and interference sources) (page 9).

Referring to claims 7, 16, 25 and 35, Skidmore et al. teach at least some of the wireless communication components are antennas, transmitters, receivers and transceivers (the components include antennas, base stations, interference sources, etc.) (pages 9 and 18).

Referring to claims 8, 17, 26 and 36, Skidmore et al. teach the performance metrics are selected from the group consisting of received signal strength intensity, throughput, bandwidth, quality of service, bit error rate, packet error rate, frame error rate, dropped packet rate, packet latency, round trip time, propagation delay, transmission delay, processing delay, queuing delay, capacity, packet jitter, bandwidth delay product, handoff delay time, signal to interference ration, signal-to-noise ratio, physical equipment price, maintenance requirements, depreciation and installation cost (performance parameters includes bandwidth, received signal strength intensity, signal-to-interference ration, signal-to-noise ratio and numerous other operating parameters associated with the base station and interference sources) (page 14 and Figure 5.4).

Referring to claims 9, 18, 27and 37, Skidmore et al. teach the computer model of the space is three dimensional (the computer model contains a height parameter, such as the ceiling height and height above floor, which gives the model a third dimension) (page 10 and Figure 5.4).

Referring to claims 10, 28 and 40, Skidmore et al. teach the step of selecting locations is performed with a graphical interface (the user interface relies upon AutoCAD to provide an interactive operating environment) (page 9).

Referring to claims 11, 29 and 41, Skidmore et al. teach specifying a location attribute for the selected components (specifying parameters for the selected base station placed at the specified location, such as height above floor) (pages 26-29, section 5.3 and further shown in Figure 5.4).

Referring to claims 30 and 38, Skidmore et al. teach the network is a wireless communications network (planning wireless communications systems in indoor environments) (page 2, first paragraph).

Referring to claims 42 and 55, Skidmore et al. teach a site specific system and method comprising a display for displaying a site map of a site in which a communications network is or will be employed (displaying a site map to assist a user in planning for wireless communications systems in indoor environments) (page 2, first and second paragraph and further shown in Figure 4.2); a computer representation, rendered on the site map on the display, of a possible configuration of a communications network which includes a plurality of components which are or may be used in the communications network (computer displayed floor plan of a configuration of a communications network in a building which includes a plurality of components that can be used in the network such as base stations and interference sources) (page 2, first and second paragraph, pages 21-22 and further shown in Figure 4.2), one or more of the plurality of components having at least one of the performance data, cost data, maintenance data and equipment settings stored in a database (parameters for the base stations and interference sources

such as performance data, i.e. transmit power, and equipment settings, i.e. height above floor, can be stored as sets of data in SMT Plus) (pages 14-15, section 3.3 and Figure 5.4); device for establishing one or more parameters of a desirable configuration of the communications network (parameters for the base stations and interference sources placed on the floor plan can be configured; users can specify parameters for the base stations to match any desired indoor radio system, set boundaries for the contour calculations and establish desired results for the simulation runs) (page 9, pages 14-15, section 3.3, and Figure 5.4); device for changing at least one of one or more components within the configuration of the communications network and equipment settings of one or more components within the configuration of the communications network (base stations and interference sources on the floor plan can be added, deleted and repositioned, and settings, or parameters for these components can also be changed and configured) (page 9, pages 14-15, section 3.3, and Figure 5.4); device for determining predicted or measured parameters for the communications network within the site computer representation (simulating the plan to predict coverage contours of the base station) (page 23 and Figure 4.3); and device for determining one or more optimized or preferred configurations of the communications network based on a comparison of predicted or measured parameters generated by the device for determining and the one or more parameters of the desirable configuration established by the device for establishing (the simulation results show and display the predicted contour coverage for respective base stations and interference sources, allowing users to compare the displayed simulation results to the user desired results, so the users can change the configuration and settings of the site map until they are satisfied) (page 9, last paragraph, pages 21- 24 and pages 29-32).

Referring to claims 43 and 56, Skidmore et al. teach determining measured parameters for the communications network (setting measured parameters such as bandwidth, transmit power and frequency of base stations and interference sources) (page 14, section 3.3).

Referring to claims 44 and 57, Skidmore et al. teach determining predicted parameters for the communications network (simulating the plan to predict coverage contours of the base station) (page 23 and Figure 4.3).

Referring to claims 45 and 58, Skidmore et al. teach one or more components of the plurality of components are selected from the group consisting of base stations, base station controllers, amplifiers, attenuators, antennas, coaxial cabling, fiber optic cabling, splitters, repeaters, transducers, converters, couplers, leaky feeder cables, hubs, switches, routers, firewalls, MIMO systems, sensors, power distribution lines, wiring, twisted pair cabling and wireless or other access points (selecting base stations and interference sources to be placed on the floor plan) (page 2, second paragraph and page 9).

Referring to claims 46 and 59, Skidmore et al. teach the one or more parameters of the desirable configuration include radio signal strength intensity, signal-to-interference ratio, signal-to-noise ratio and numerous other operating parameters associated with the base station and interference sources) (page 14 and Figure 5.4).

Referring to claims 47 and 60, Skidmore et al. teach automatically changing in an iterative process a type of component of the one or more components (SMT Plus can automatically change the type of components on the floor plan iteratively by continuously loading in a number of pre-existing parameter sets to be used within the floor plan) (pages 9, 14-15 and 27-30 and further shown in Figure 5.4).

Referring to claims 48 and 61, Skidmore et al. teach manually changing in an iterative process a type of component of the one or more components (the user can instruct the device to continuously add or delete a number of components to the floor plan) (page 9).

Referring to claims 49 and 62, Skidmore et al. teach automatically changing in an iterative process manufacturer of the one or more components (SMT Plus can automatically change the manufacturer by continuously loading in different sets of manufacturer's standard parameter values such as the "IS 95 default parameters", the "IEEE802.11 default parameters", etc.) (pages 9, 14-15 and 27-30 and further shown in Figure 5.4).

Referring to claims 50 and 63, Skidmore et al. teach manually changing in an iterative process manufacturer of the one or more components (the user can continuously configure the device by continuously instructing the device to use different manufacturer's default parameter sets) (pages 9 and 27-30 and further shown in Figure 5.4).

Referring to claims 51 and 64, Skidmore et al. teach automatically changing in an iterative process a location of a component of the one or more components (SMT Plus can automatically change location of a component by continuously loading in a number of parameter sets to be used within the floor plan, the parameter sets including a reference distance parameter) (pages 9, 14-15 and 27-30 and further shown in Figure 5.4).

Referring to claims 52 and 65, Skidmore et al. teach manually changing in an iterative process a location of a component of the one or more components (the user can continuously configure the floor plan by continuously repositioning the base stations and interference sources) (page 9).

Referring to claims 53 and 66, Skidmore et al. teach automatically changing in an iterative process one or more of transmit power, channel or frequency, bandwidth, data rate, antenna type, antenna configurations or positions, modulation or coding type, protocol, data rate, switching in a spare component, resetting or changing settings of a component of the one or more components (SMT Plus can continuously load in a number of parameter sets to automatically change parameters such as bandwidth, transmit power, etc.) (pages 9, 14-15 and 27-30 and further shown in Figure 5.4).

Referring to claims 54 and 67, Skidmore et al. teach manually changing in an iterative process one or more of transmit power, channel or frequency, bandwidth, data rate, antenna type, antenna configurations or positions, modulation or coding type, protocol, data rate, switching in a spare component, resetting or changing settings of a component of the one or more components (the user can continuously configure and change parameters such as bandwidth, transmit power, etc.) (pages 9, 14-15 and 27-30 and further shown in Figure 5.4).

Referring to claims 68 and 69, Skidmore et al. teach a site specific system and method comprising a display for displaying a site map of a site in which a communications network is or will be employed (displaying a site map to assist a user in planning for wireless communications systems in indoor environments) (page 2, first and second paragraphs and further shown in Figure 4.2); identifier identifying locations on the site map where placement of one or more components of the communications network meet specified criteria (for example, locations on any of the floors inside the building floor map of Figure 4.meet criteria and locations outside of the building floor map area do not meet criteria, since SMT calculations are limited to an indoor environment) (page 10); device for establishing one or more parameters of a desirable

configuration of the communications network (parameters for the base stations and interference sources placed on the floor plan can be configured; users can specify parameters for the base stations to match any desired indoor radio system, set boundaries for the contour calculations and establish desired results for the simulation runs) (page 9, pages 14-15, section 3.3, and Figure 5.4); device for configuring a computer representation on the site map on the display a possible configuration of a communications network which includes a plurality of the one or more components which are or may be used in the communications network (the computer displays a floor plan of a configuration of a communications network in a building which includes a plurality of components that can be used in the network such as base stations and interference sources) (page 2, first and second paragraph, pages 21-22 and further shown in Figure 4.2), one or more of the components having at least one of performance data, cost data, maintenance data and equipment settings stored in a database, the device for configuring positioning on the site map computer representations of the one or more components only at locations which meet specified criteria (parameters such as performance data, i.e. transmit power, and equipment settings, i.e. height above floor, for the base stations and interference sources placed at locations which meet criteria, such as inside the building floor plan on the display, can be stored as sets of data in SMT Plus) (pages 14-15, section 3.3 and Figure 5.4), and device for determining one or more optimized or preferred configurations of the communications network based on a comparison of predicted or measured parameters for a configuration generated by the device for configuring with the one or more parameters of the desirable configuration established by the device for establishing (the simulation results show and display the predicted contour coverage for respective base stations and interference sources, allowing users to compare the displayed

simulation results to the user desired results, so the users can change the configuration and settings of the site map until they are satisfied) (page 9, last paragraph, pages 21- 24 and pages 29-32).

Response to Arguments

3. Applicant's arguments filed 27 December 2004 have been fully considered but they are not persuasive:

4. As a first note, in response to the applicant's addition of "site specific" into independent claims 1 and 12, the examiner respectfully points out that the recitation "site specific" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

5. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., ability to iterate, adapt or rank over many possible settings or configurations, iteratively adjusting or comparing simulation runs) are not **recited** in the rejected claim(s). Although the claims are

interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

6. The applicant argues that the examiner's conclusion that SMP Plus establishes a desired performance metric for at least one location within the space is erroneous and rather, SMT Plus simply shows the results for a particular or arbitrary transmitter location. The examiner respectfully disagrees. As the SMT Plus states, all parameters for base stations or interference sources on a displayed floor plan are user configurable (page 9); users can specify parameters for base stations to match any desired indoor radio system and set boundaries for contour calculations as desired (pages 2, 25-32 and 43). In other words, users can establish performance metrics such as parameters, settings and contour calculation results according their selections and desires.

7. The applicant further argues that SMP Plus does not show a specific "established" ("desired") performance metric at a specific location, the user of the SMT Plus has no ability to command or force the displayed contour to meet an established performance metric at a particular location, but rather had to accept the contours as they were computed, SMT Plus had no way to adapt or iterate equipment locations or configurations in order to adjust the computed contour, and that instead, the user had to manually make adjustments and run a completely new simulation. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., ability to command or force the displayed contour to meet an established performance metric, and ways to

adapt or iterate equipment locations or configurations in order to adjust the computed contour) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The limitations of the claims, as presently recited, state "establishing a desired performance metric for at least one selected location within the space" and "comparing the predicted performance metric to the desired performance metric". The examiner respectfully notes that the limitations do not require comparing the predicted performance metric to the desired performance metric, and specifying components and locations automatically until a desired comparison result is obtained, to be done by the system, instead of the user; in other words, the limitations of the claims do not exclude the interpretation of allowing user to manually make adjustments and initiate a new simulation, with the system automatically running the simulation in response to user initiation, until the user is satisfied with the results. SMT Plus teaches allowing users to specify components and locations for the components, i.e. allowing users to add, delete and reposition any base station and interference source on a floor plan (page 9), establishing a desired performance metric for at least one selected location within the space, i.e. establishing a parameter value, or contour setting for the base stations and interference sources at the desired locations (pages 2, 14, 25-29 and 43) and comparing the predicted performance metric to the desired performance metric, i.e. users can view the displayed simulation results showing the predicted coverage regions for the base stations and interference sources, to the desired contour coverage regions for base stations and interference sources that the users had wanted to achieve (pages 23, 29-32 and 43); in other words, users certainly have the option to identify or compare any configuration for desired

simulation results, via users selecting and repositioning base stations and interference sources, setting parameter values, establishing a desired result, even if the desired result is just established in the user's mind, instead of explicitly entered into the system, and running simulations as many times as needed for the simulation to meet a user's desire, i.e. for a desired contour coverage region to be achieved.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ting Zhou whose telephone number is (571) 272-4058. The examiner can normally be reached on Monday - Friday 7:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cabeca can be reached at (571) 272-4048. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-4058.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TZ

JOHN CABECA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER